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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action SummaryApplication No. **10/087,342**Applicant(s) **BECHTOLSHEIM ET AL.**

Examiner

Frank Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-92 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-92 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is a response to the amendment dated 07/06/04. Previously prosecuted claims 32-89 and newly added claims 90-92 are pending in the application.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 32-92 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-31 of U.S. Patent No. 6,377,577. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Claims 73-89 of the instant application call for a system claim that mirrored the method claims 1-31 of the '577 patent.

Claims 1-31 of the '577 patent teaches essentially the same steps/means as claims 32-92 of the current application. Even though claims 32-92 are broadened by omitting certain limitation, i.e. ("*maintaining a set of access control patterns in at least*

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one associative memory" was omitted in claims 32-72), it has been held that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function as before. *In re Karlson*, 136 USPQ 184(CCPA). Also note *Ex parte Rainu*, 168 USPQ 375 (Bd. App. 1969); omission of a reference element whose function is not needed would be an obvious variation.

In addition, a comparison of claims 32-72 of the instant application and claims 1-31 of the '577 patent a skilled artisan would have recognized the difference is a mere wording. Such difference is deemed to be obvious.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 32-43, 45-70 and 72 and 90-92 are rejected under 35 U.S.C. 102(b) as being anticipated by McAuley et al (*Fast Routing Table Lookup Using CAMs, Bellcore, pages 1-10, 1993*) (hereinafter "McAuley") (*note: McAuley reference is the technical document that mirror patent 5,386,413 applied in the previous Office Action*).

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Regarding **claim 32**, in accordance with McAuley reference entirety, McAuley discloses a method of processing a packet (Figure 3) comprising:

matching one or more characteristics of said packet with one or more access control specifiers in at least one access control element (*Figure 3; MASK CIRCUIT and page 6, right column, last paragraph to page 7, left column, first paragraph*);

selecting a highest priority match (best match) (highest priority) based on a type of an access control specifier (packtAddress) of the highest priority match, which the type of the access control specifier of the highest priority match is related to an element of a packet header to which the access control specifier of the highest priority match is responsive (*page 7, left column, second paragraph, McAuley discusses if there are multiple matches, the match prioritizer distinguishes which is the best match or highest priority discussed in page 9, left column, first paragraph*); and

processing said packet based on said matching (*page 7, left column, McAuley discloses the prioritizer only enables one buffer to drive its signal onto the output bus*).

Regarding **claim 33**, in addition to features recited in claim 32 (see rationales discussed above), McAuley further discloses wherein said access control element is a content addressable memory (*FIG. 3; CAM-1 or CAM-3*).

Regarding **claim 34**, in addition to features recited in claim 32 (see rationales discussed above), McAuley further discloses wherein said matching and said processing is done in parallel (*FIG. 3; CAM-1-CAM-3*).

Regarding **claim 35**, in addition to features recited in claim 32 (see rationales discussed above), McAuley further discloses wherein said characteristics of said packet

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comprises one or more of a source address, a destination address, a source port, a destination port, a protocol type, an input interface and an output interface (*Fig. 3; Port B-C or page 1, left column, "routing table" discussed in the Introduction or page 2, left column, section 2.2*).

Regarding **claim 36**, in addition to features recited in claim 32 (see rationales discussed above), McAuley further discloses wherein said characteristics of said packet comprises data carried by said packet in a packet header (*inherent in the IP packet discussed in page 1, right column*).

Regarding **claim 37**, in addition to features recited in claim 32 (see rationales discussed above), McAuley further discloses receiving said packet (*FIG. 3; Input prong depicts 201-829-4484*).

Regarding **claim 38**, in addition to features recited in claim 32 (see rationales discussed above), McAuley further discloses identifying one or more of said access control specifiers based on said matching (*page 7, left column; indicating port B in the discussed example*).

Regarding **claim 39**, in addition to features recited in claim 37 (see rationales discussed above), McAuley further discloses prioritizing said one or more of said access control specifiers identified based on said matching to generate a set of prioritized access control specifiers (*FIG. 3; match prioritizer; page 7, left column, McAuley discusses if there are multiple matches, the match prioritizer pickets the best match*).

Regarding **claim 40**, in addition to features recited in claim 39 (see rationales discussed above), McAuley further discloses wherein said prioritizing is done in parallel by a priority encoder (*FIG. 3; match prioritizer and col. 7, line 8 to col. 10, line 45*).

Regarding **claim 41**, in addition to features recited in claim 39 (see rationales discussed above), McAuley further discloses wherein said prioritizing is done based on an address of said access control specifiers (packetAddress) in said access control element (*FIG. 3; match prioritizer*).

Regarding **claim 42**, in addition to features recited in claim 39 (see rationales discussed above), McAuley further discloses wherein said processing is done based on said set of prioritized access control specifiers (*FIG. 3; 150 and col. 7, line 8 to col. 10, line 45*).

Regarding **claim 43**, in addition to features recited in claim 32 (see rationales discussed above), McAuley further discloses wherein said processing further comprising: if said packet requires processing by a higher-level processor, forwarding said packet to said higher-level processor (*FIG. 3; PORT B*).

Regarding **claim 45**, in addition to features recited in claim 32 (see rationales discussed above), McAuley further discloses if said packet requires forwarding, forwarding said packet (*FIG. 3; PORT B*).

Regarding **claim 46**, in accordance with McAuley reference entirety, McAuley discloses a system for processing a packet comprising:

one or more access control specifiers, wherein said one or more access control specifiers are of one or more types of access control specifiers, said one or more types

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of access control specifiers being related to one or more elements of a packet header to which said one or more access control specifiers is responsive (*Fig. 3; Ports B-C or page 1, left column, "routing table" discussed in the Introduction or page 2, left column, section 2.2 or page 7, left column; packetAddress*);

an access control element, wherein said access control element is configured to store said one or more access control specifiers (*FIG. 3; CAM-1, CAM-2 or CAM-3*); and

a priority encoder coupled to said access control element, wherein said priority encoder is configured to prioritize in parallel said one or more access control specifiers matched with one or more characteristics of said packet (*FIG. 3; match prioritizer*) and to select a highest priority match based on said one or more types of access control specifiers (*page 7, left column, second paragraph, McAuley discusses if there are multiple matches, the match prioritizer distinguishes which is the best match or highest priority discussed in page 9, left column, first paragraph*).

Regarding **claim 47**, in addition to features recited in claim 46 (see rationales discussed above), McAuley further discloses wherein said priority encoder is further configured to prioritize said one or more access control specifiers matched with said one or more characteristics of said packet according to an address of said one or more access control specifiers in said access control element (*FIG. 3; match prioritizer and col. 7, line 8 to col. 10, line 45*).

Regarding **claim 48**, in addition to features recited in claim 46 (see rationales discussed above), McAuley further discloses a compare unit coupled to said access

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control list, wherein said compare unit is configured to compare said one or more characteristics of said packet with one or more values (*FIG. 3; MASK CIRCUIT*)

Regarding **claim 49**, in addition to features recited in claim 48 (see rationales discussed above), McAuley further discloses wherein said one or more values are predetermined (*FIG. 3; LOAD for mask-3-mask-10*)

Regarding **claim 50**, in addition to features recited in claim 48 (see rationales discussed above), McAuley further discloses wherein said one or more values are dynamically determined (*FIG. 3; LOAD for mask-3-mask-10*)

Regarding **claim 51**, in addition to features recited in claim 48 (see rationales discussed above), McAuley further discloses wherein said compare unit is further configured to perform arithmetic operation on data carried by said packet in a packet header (*FIG. 3; MASK CIRCUIT*)

Regarding **claim 52**, in addition to features recited in claim 48 (see rationales discussed above), McAuley further discloses wherein said compare unit is further configured to perform logical operation on said data carried by said packet in said packet header (*FIG. 3; MASK CIRCUIT*)

Regarding **claim 53**, in addition to features recited in claim 46 (see rationales discussed above), McAuley further discloses wherein said access control element further comprising: an access control memory (*FIG. 3; CAM-1, CAM-2 or CAM-3*).

Regarding **claim 54**, in addition to features recited in claim 53 (see rationales discussed above), McAuley further discloses wherein said access control memory is a content-addressable memory (*FIG. 3; CAM-1, CAM-2 or CAM-3*).

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Regarding **claim 55**, in addition to features recited in claim 53 (see rationales discussed above), McAuley further discloses wherein said access control memory stores at least one of said access control specifier (FIG. 3; LOAD for mask-3-mask-10).

Regarding **claim 56**, in addition to features recited in claim 53 (see rationales discussed above), McAuley further discloses wherein said access control specifier further comprising:

a label match mask configured to determine whether a first corresponding bit of said one or more characteristics of said packet is tested (FIG. 3; LOAD for mask-3-mask-10); and

a label match pattern, wherein said label match pattern is compared with a second corresponding bit of said one or more characteristics of said packet (FIG. 3; 101).

Regarding **claim 57**, in addition to features recited in claim 46 (see rationales discussed above), McAuley further discloses a processor, coupled to said access control element, said processor is configured to process said packet when said packet is not processed by said access control element (*not shown; inherent to have processing mechanism in a switch*).

Regarding **claim 58**, in addition to features recited in claim 46 (see rationales discussed above), McAuley further discloses at least one input port coupled to said access control element, wherein said input port is configured to receive said packet; and at least one output port coupled to said access control element, wherein said packet is

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forwarded via said out put port (*not shown; inherent as part of FIG. 3 in order to receive and route packet*).

Regarding **claim 59**, in accordance with McAuley reference entirety, McAuley discloses a system for processing a packet comprising:

means for matching one or more characteristics of said packet with one or more access control specifiers in at least one access control element (CAM-1 or CAM-2 or CAM-3); and

means for processing said packet based on said matching (match prioritizer).

Regarding **claim 60**, in addition to features recited in claim 59 (see rationales discussed above), McAuley further discloses wherein said access control element is a content addressable memory (CAM-1 or CAM-2 or CAM-3).

Regarding **claim 61**, in addition to features recited in claim 59 (see rationales discussed above), McAuley further discloses wherein said matching and said processing is done in parallel (CAM-1 or CAM-2 or CAM-3).

Regarding **claim 62**, in addition to features recited in claim 59 (see rationales discussed above), McAuley further discloses wherein said characteristics of said packet comprises one or more of a source address, a destination address, a source port, a destination port, a protocol type, an input interface and an output interface (*Fig. 3; Ports B-C or page 1, left column, "routing table" discussed in the Introduction or page 2, left column, section 2.2 or page 7, left column; packetAddress*).

Regarding **claim 63**, in addition to features recited in claim 59 (see rationales discussed above), McAuley further discloses wherein said characteristics of said packet

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comprises data carried by said packet in a packet header (*inherent in the IP packet discussed in page 1, right column*).

Regarding **claim 64**, in addition to features recited in claim 59 (see rationales discussed above), McAuley further discloses means for receiving said packet (*not shown; inherent as part of FIG. 3 in order to receive and route packet*).

Regarding **claim 65**, in addition to features recited in claim 59 (see rationales discussed above), McAuley further discloses means for identifying one or more of said access control specifiers based on said matching (FIG. 3; match prioritizer).

Regarding **claim 66**, in addition to features recited in claim 64 (see rationales discussed above), McAuley further discloses means for prioritizing said one or more of said access control specifiers identified based on said matching to generate a set of prioritized access control specifiers (FIG. 3; match prioritizer).

Regarding **claim 67**, in addition to features recited in claim 66 (see rationales discussed above), McAuley further discloses wherein said prioritizing is done in parallel by a priority encoder (FIG. 3; 150).

Regarding **claim 68**, in addition to features recited in claim 66 (see rationales discussed above), McAuley further discloses wherein said prioritizing is done based on an address of said access control specifiers in said access control element (FIG. 3; 150).

Regarding **claim 69**, in addition to features recited in claim 66 (see rationales discussed above), McAuley further discloses wherein said processing is done based on said set of prioritized access control specifiers (FIG. 3; match prioritizer).

Regarding **claim 70**, in addition to features recited in claim 59 (see rationales discussed above), McAuley further discloses wherein said processing further comprising: means for forwarding said packet to said higher-level processor if said packet requires processing by a higher-level processor (*not shown; inherent to have processing mechanism in a switch*).

Regarding **claim 72**, in addition to features recited in claim 59 (see rationales discussed above), McAuley further discloses means for forwarding said packet if said packet requires forwarding (*FIG. 3; PORT B*).

Regarding **claim 90**, in accordance with McAuley reference entirety, McAuley discloses a method of processing a packet (*Fig. 3 page 6, right column to page 7, left column*; comprising:

determining a selected output interface for the packet (*Fig. 3; AND gates for enable/disable Ports B-C*);

matching one or more characteristics of said packet with one or more access control specifiers in at least one access control element, which said matching step is performed in parallel with said determining steps (*Fig. 3; match prioritizer*); and

processing said packet based on said matching (*Fig. 3; AND gates for enable/disable Ports "B-C*).

Regarding **claim 91**, in addition to features recited in base claim 32 (see rationales discussed above), McAuley further discloses wherein said one or more access control specifiers include a label match mask (*Fig. 3; mask-3-mask-10*) and a label match pattern (*Fig. 3; matches Table*).

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Regarding **claim 92**, in addition to features recited in base claim 46 (see rationales discussed above), McAuley further discloses wherein said one or more access control specifiers include a label match mask (Fig. 3; mask-3-mask-10) and a label match pattern (Fig. 3; matches Table).

4. Claims 32-89 are rejected under 35 U.S.C. 102(a) as being anticipated by Alessandri (*Access Control List Processing in Hardware, Diploma Thesis, pages 1-85, October 1997*).

Regarding **claim 32**, in accordance with Alessandri reference entirety, Alessandri discloses a method of processing a packet (Figure 4 or Figure 10) comprising:

matching one or more characteristics (*page 14, description pertaining Interface identifier or netflowlabel*) of said packet with one or more access control specifiers in at least one access control element (*page 13, section 3.1 and description pertaining the comparison of CAM entries of the netflowlabel*);

selecting a highest priority match based on a type of an access control specifier of the highest priority match, which the type of the access control specifier of the highest priority match is related to an element of a packet header to which the access control specifier of the highest priority match is responsive (*priority encoder shown in Fig. 16 in page 19 and thereafter*); and

processing said packet based on said matching (*page 13, section 3.1 and description pertaining a match condition*).

Regarding **claim 33**, in addition to features recited in claim 32 (see rationales discussed above), Alessandri further discloses wherein said access control element is a content addressable memory (Figure 10).

Regarding **claim 34**, in addition to features recited in claim 32 (see rationales discussed above), Alessandri further discloses wherein said matching and said processing is done in parallel (*page 6, section 2.2.1 and description pertaining filtering decision can be pipelined or page 14, first paragraph*).

Regarding **claim 35**, in addition to features recited in claim 32 (see rationales discussed above), Alessandri further discloses wherein said characteristics of said packet comprises one or more of a source address, a destination address, a source port, a destination port, a protocol type, an input interface and an output interface (*page 14, description pertaining Interface identifier or netflowlabel*).

Regarding **claim 36**, in addition to features recited in claim 32 (see rationales discussed above), Alessandri further discloses wherein said characteristics of said packet comprises data carried by said packet in a packet header (*page 14, description pertaining Interface identifier and netflowlabel*).

Regarding **claim 37**, in addition to features recited in claim 32 (see rationales discussed above), Alessandri further discloses receiving said packet (*page 10, section 1.0 and description pertaining packet forwarding*).

Regarding **claim 38**, in addition to features recited in claim 32 (see rationales discussed above), Alessandri further discloses identifying one or more of said access control specifiers based on said matching (*page 14, first paragraph; "first match"*).

Regarding **claim 39**, in addition to features recited in claim 37 (see rationales discussed above), Alessandri further discloses prioritizing said one or more of said access control specifiers identified based on said matching to generate a set of prioritized access control specifiers (*page 19, section 3.3.3, priority encoder*).

Regarding **claim 40**, in addition to features recited in claim 39 (see rationales discussed above), Alessandri further discloses wherein said prioritizing is done in parallel by a priority encoder (*page 19, section 3.3.3, priority encoder*).

Regarding **claim 41**, in addition to features recited in claim 39 (see rationales discussed above), Alessandri further discloses wherein said prioritizing is done based on an address of said access control specifiers in said access control element.

Regarding **claim 42**, in addition to features recited in claim 39 (see rationales discussed above), Alessandri further discloses wherein said processing is done based on said set of prioritized access control specifiers (*page 19, section 3.3.3, priority encoder*).

Regarding **claim 43**, in addition to features recited in claim 32 (see rationales discussed above), Alessandri further discloses wherein said processing further comprising: if said packet requires processing by a higher-level processor, forwarding said packet to said higher-level processor (*page 4, Figure 2; CPU*).

Regarding **claim 44**, in addition to features recited in claim 32 (see rationales discussed above), Alessandri further discloses if said packet requires dropping, dropping said packet (*page 4, Figure 2; Drop Port or page 5, Figure 3*).

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Regarding **claim 45**, in addition to features recited in claim 32 (see rationales discussed above), Alessandri further discloses if said packet requires forwarding, forwarding said packet (*page 4, Figure 2; Permit decision or page 5, Figure 3*).

Regarding **claim 46**, in accordance with Alessandri reference entirety, Alessandri discloses a system for processing a packet comprising:

one or more access control specifiers, wherein said one or more access control specifiers are of one or more types of access control specifiers, said one or more types of access control specifiers being related to one or more elements of a packet header to which said one or more access control specifiers is responsive (semantics of ACLs discussed in page 14);

an access control element, wherein said access control element is configured to store one or more access control specifiers (*page 19, Figure 16, CAM entries*); and

a priority encoder coupled to said access control element, wherein said priority encoder is configured to prioritize in parallel said one or more access control specifiers matched with one or more characteristics of said packet and to select a highest priority match based on said one or more types of access control specifiers (*page 19, section 3.3.3 and Figure 16*).

Regarding **claim 47**, in addition to features recited in claim 46 (see rationales discussed above), Alessandri further discloses wherein said priority encoder is further configured to prioritize said one or more access control specifiers matched with said one or more characteristics of said packet according to an address of said one or more

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access control specifiers in said access control element (*page 19, section 3.3.3 and Figure 16*).

Regarding **claim 48**, in addition to features recited in claim 46 (see rationales discussed above), Alessandri further discloses a compare unit coupled to said access control list, wherein said compare unit is configured to compare said one or more characteristics of said packet with one or more values (*page 13, section 3.1 and Figure 10; AND-operation*).

Regarding **claim 49**, in addition to features recited in claim 48 (see rationales discussed above), Alessandri further discloses wherein said one or more values are predetermined (*page 13, section 3.1 and Figure 10; netflowlabel or netflow mask*).

Regarding **claim 50**, in addition to features recited in claim 48 (see rationales discussed above), Alessandri further discloses wherein said one or more values are dynamically determined (*page 13, section 3.1 and Figure 10; netflowlabel or netflow mask*).

Regarding **claim 51**, in addition to features recited in claim 48 (see rationales discussed above), Alessandri further discloses wherein said compare unit is further configured to perform arithmetic operation on data carried by said packet in a packet header (*page 13, section 3.1; AND-operation*).

Regarding **claim 52**, in addition to features recited in claim 48 (see rationales discussed above), Alessandri further discloses wherein said compare unit is further configured to perform logical operation on said data carried by said packet in said packet header (*page 13, section 3.1; AND-operation*).

Regarding **claim 53**, in addition to features recited in claim 46 (see rationales discussed above), Alessandri further discloses wherein said access control element further comprising: an access control memory (*page 6, Figure 4; CAM*).

Regarding **claim 54**, in addition to features recited in claim 53 (see rationales discussed above), Alessandri further discloses wherein said access control memory is a content-addressable memory (*page 6, Figure 4; CAM*).

Regarding **claim 55**, in addition to features recited in claim 53 (see rationales discussed above), Alessandri further discloses wherein said access control memory stores at least one of said access control specifier (*page 13, Figure 10; CAM entries*).

Regarding **claim 56**, in addition to features recited in claim 53 (see rationales discussed above), Alessandri further discloses wherein said access control specifier further comprising:

a label match mask (*netflowlabel mask*) configured to determine whether a first corresponding bit of said one or more characteristics of said packet is tested (*page 13, section 3.1*); and

a label match pattern (*netflowlabel pattern*), wherein said label match pattern is compared with a second corresponding bit of said one or more characteristics of said packet (*page 13, section 3.1*).

Regarding **claim 57**, in addition to features recited in claim 46 (see rationales discussed above), Alessandri further discloses a processor, coupled to said access control element, said processor is configured to process said packet when said packet is not processed by said access control element (*page 5, Figure 3; CPU*).

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Regarding **claim 58**, in addition to features recited in claim 46 (see rationales discussed above), Alessandri further discloses at least one input port coupled to said access control element, wherein said input port is configured to receive said packet; and at least one output port coupled to said access control element, wherein said packet is forwarded via said output port (*page 5, Figure 3 and thereafter*).

Regarding **claim 59**, in accordance with Alessandri reference entirety, Alessandri discloses a system for processing a packet comprising:

means for matching one or more characteristics of said packet with one or more access control specifiers in at least one access control element (*page 5, Figure 3; ACL and thereafter*); and

means for processing said packet based on said matching (*page 5, Figure 3; packet routing or forwarding*).

Regarding **claim 60**, in addition to features recited in claim 59 (see rationales discussed above), Alessandri further discloses wherein said access control element is a content addressable memory (*page 13, section 3.0 and thereafter*).

Regarding **claim 61**, in addition to features recited in claim 59 (see rationales discussed above), Alessandri further discloses wherein said matching and said processing is done in parallel (*page 6, section 2.2.1; pipelined or page 14, section 3.1; parallel*).

Regarding **claim 62**, in addition to features recited in claim 59 (see rationales discussed above), Alessandri further discloses wherein said characteristics of said packet comprises one or more of a source address, a destination address, a source

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port, a destination port, a protocol type, an input interface and an output interface (*page 14 and Figure 11; Interface identifier*).

Regarding **claim 63**, in addition to features recited in claim 59 (see rationales discussed above), Alessandri further discloses wherein said characteristics of said packet comprises data carried by said packet in a packet header (*page 14; Figure 11*).

Regarding **claim 64**, in addition to features recited in claim 59 (see rationales discussed above), Alessandri further discloses means for receiving said packet (*page 6, Figure 4; Input Interfaces*).

Regarding **claim 65**, in addition to features recited in claim 59 (see rationales discussed above), Alessandri further discloses means for identifying one or more of said access control specifiers based on said matching (*page 13, Figure 10*).

Regarding **claim 66**, in addition to features recited in claim 64 (see rationales discussed above), Alessandri further discloses means for prioritizing said one or more of said access control specifiers identified based on said matching to generate a set of prioritized access control specifiers (*page 19, section 3.3.3, Figure 16; priority encoder*).

Regarding **claim 67**, in addition to features recited in claim 66 (see rationales discussed above), Alessandri further discloses wherein said prioritizing is done in parallel by a priority encoder (*page 19, section 3.3.3, Figure 16; priority encoder*).

Regarding **claim 68**, in addition to features recited in claim 66 (see rationales discussed above), Alessandri further discloses wherein said prioritizing is done based on an address of said access control specifiers in said access control element (*page 19, section 3.3.3, Figure 16; priority encoder*).

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Regarding **claim 69**, in addition to features recited in claim 66 (see rationales discussed above), Alessandri further discloses wherein said processing is done based on said set of prioritized access control specifiers (*page 19, section 3.3.3, Figure 16; priority encoder*).

Regarding **claim 70**, in addition to features recited in claim 59 (see rationales discussed above), Alessandri further discloses wherein said processing further comprising: means for forwarding said packet to said higher-level processor if said packet requires processing by a higher-level processor (*page 5, Figure 3; CPU*).

Regarding **claim 71**, in addition to features recited in claim 59 (see rationales discussed above), Alessandri further discloses means for dropping said packet if said packet requires dropping (*page 5, Figure 3; Drop Port*).

Regarding **claim 72**, in addition to features recited in claim 59 (see rationales discussed above), Alessandri further discloses means for forwarding said packet if said packet requires forwarding (*page 5, Figure 3; Output Port or Routing decision*).

Regarding **claim 73**, in accordance with Alessandri reference entirety, Alessandri discloses a system comprising:

means for maintaining a set of access control patterns in at least one associative memory (*page 5, Figure 3; ACL*);

means for receiving a packet label responsive to a packet, said packet label being sufficient to perform access control processing for said packet (*page 4, Figure 2, Input interface or page 5, Figure 3, input port*);

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means for matching matchable information, said matchable information being responsible to said packet label, with said set of access control patterns in parallel (*page 5, Figure 3; ACL processing device or page 13, Figure 10*);

means for generating a set of matches in response thereto, each said match having priority information associated therewith (*page 5, Figure 3; permit/deny decision or page 13, Figure 10*);

means for selecting at least one of said matches in response to said priority information, and generating an access result in response to said at least one selected match (*page 5, Figure 3; first demux*); and

means for making a routing decision in response to said access result (*page 5, Figure 3; routing decision or overwrite routing decision*).

Regarding **claim 74**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for choosing a first one of said matches (*page 19, Figure 16; priority encoder*).

Regarding **claim 75**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for determining an output interface for said packet (*page 5, Figure 3; output interface or page 13 or 19, Figure 16 or Figure 19; CAM output*).

Regarding **claim 76**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for implementing a quality of service policy (*page 14, Figure 13*).

Regarding **claim 77**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for permitting or denying access for said packet (*page 14, Figure 12; PermDrop*).

Regarding **claim 78**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for making a preliminary routing decision for said packet (*page 14, Figure 12; CPU*).

Regarding **claim 79**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for determining at least one output interface for said packet (*page 5, Figure 3; output interface or page 13 or 19, Figure 16 or Figure 19; CAM output*).

Regarding **claim 80**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for preprocessing said packet label (*page 13, Figure 10; input of CAM or page 19, Figure 16; input preprocessing*); and means for generating said matchable information (*page 13, Figure 10; CAM output*).

Regarding **claim 81**, in addition to features recited in claim 79 (see rationales discussed above), Alessandri further discloses means for performing one or more of an arithmetic, logical, and comparison operation on said packet label (*page 13, Figure 10; AND-operation*); and

means for generating a bit string for said matchable information in response to said arithmetic, logical, and comparison operation (*page 13, Figure 10; CAM entries*).

Regarding **claim 82**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for comparing a field of said packet label with an arithmetic range or mask value (*page 13, Figure 10; AND-operation between netflowlabel pattern and netflowlabel mask*).

Regarding **claim 83**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for comparing a source IP port value or a destination IP port value with a selected port value (*page 13, Figure 10*).

Regarding **claim 84**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for postprocessing said selected match to generate said access result (*page 19, Figure 16; priority encoder*).

Regarding **claim 85**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for accessing a memory in response to a bitstring included in said selected match (*page 5, Figure 3; ACL processing device or page 19, Figure 16; output memory*).

Regarding **claim 86**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for declaring whether to permit or deny access of a set of packets (*page 5, Figure 3, permit/deny decision*).

Regarding **claim 87**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for receiving a sequence of access control specifiers (*page 5, Figure 3; ACL processing device*);

means for translating said sequence of access control specifiers into said sequence of access control patterns (*page 5, Figure 3; ACL processing device*); and

means for storing said sequence of access control patterns in said associative memory (*page 5, Figure 3; ACL processing device*).

Regarding **claim 88**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for generating a single one of said access control patterns in response to a plurality of said access control specifiers (*page 5, Figure 3; ACL processing device or page 13, Figure 10; CAM*).

Regarding **claim 89**, in addition to features recited in claim 73 (see rationales discussed above), Alessandri further discloses means for generating a single one of said access control patterns in response to a plurality of said access control specifiers *page 5, Figure 3; ACL processing device or page 13, Figure 10; CAM*).

Regarding **claim 90**, in accordance with Alessandri reference entirety, Alessandri discloses a method of processing a packet (*Fig. 3 page 6, right column to page 7, left column*; comprising:

determining a selected output interface for the packet (*Fig. 16; Input Preprocessing and CAM entries*);

matching one or more characteristics of said packet with one or more access control specifiers in at least one access control element, which said matching step is performed in parallel with said determining steps (*Fig. 16; priority encoder*); and

processing said packet based on said matching (*Fig. 16; output memory*).

Regarding **claim 91**, in addition to features recited in base claim 32 (see rationales discussed above), Alessandri further discloses wherein said one or more

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access control specifiers include a label match mask (Fig. 10; mask mn) and a label match pattern (Fig. 10; mask pn).

Regarding **claim 92**, in addition to features recited in base claim 46 (see rationales discussed above), Alessandri further discloses wherein said one or more access control specifiers include a label match mask (Fig. 10; mask mn) and a label match pattern (Fig. 10; mask pn).

Response to Arguments

5. Applicant's arguments filed 07/06/2004 have been fully considered but they are not persuasive.

In the Remarks of the outstanding response, pertaining double patenting rejection, on page 11, Applicants merely states a terminal disclaimer pursuant to 37 C.F.R. § 1.321(c) to overcome the obvious-type double patenting rejection. However, there is no record of such terminal filed.

Pertaining the rejection of claims 32-43, 45-70, 72 under 35 U.S.C. § 102(b) as being anticipated by McAuley et al, Applicants argue based on the newly added limitation that the cited reference does not teach "selecting a highest priority match based on a type of an access control specifier of the highest priority match, wherein the type of the access control specifier of the highest priority match is based on an element of a packet header to which the access control specifier of the highest priority match is responsive".

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In response Examiner respectfully disagrees and provides a new ground of rejection formulated based on McAuley technical reference entitled Fast Routing Table Lookup using CAMS, mirrored the disputed patent to better point out the claimed limitation the Applicants asserted and claimed to be novel. Please refer to the well formulated rejection discussed above.

Pertaining to claims 32-89 under 35 U.S.C. § 102(a) as being anticipated by Alessandri, Applicants stated "*Accompanying this response is a copy of a previously submitted declaration of prior invention in the United States pursuant to 37 C.F.R. § 1.131 to overcome the cited reference*". Applicants ought to file a separate 37 C.F.R. § 1.131 from the parent case in order to overcome the applied art, not the parent application's declaration.

Examiner believes an earnest attempt has been made in addressing all of the Applicants' arguments.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (571) 272-3164. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Frank Duong
Examiner
Art Unit 2666

November 15, 2004